REMARKS

In the office action mailed on April 27, 2004, claims 24 - 26 and 29 - 31 were rejected under 35 U.S.C. §102(e) over U.S. Patent No. 4,717,223 (to Ishida et al.); and claims 8, 11 - 23, 27 and 28 were rejected under 35 U.S.C. §112, ¶2. Claims 1 - 7, 9 and 10 were indicated as being allowable.

Claims 1, 5, 8 - 14, 16, 17 - 18, 22 - 24, 27 and 29 - 30 are amended herein, in part, to address the rejections of claims 8, 11 - 23, 27 and 28 under §112, ¶2..

The Ishida et al. reference discloses an optical deflector that is disclosed to maintain stable rotation of a polygonal mirror over extended periods of time. The deflector is disclosed to include a supporting shaft made of nonmagnetic material, a cylindrical shaft made of nonmagnetic material, a journal bearing, and a magnetic thrust bearing for axially suspending the cylindrical shaft by means of magnetic force.

In particular, and with reference to Figure 2 of Ishida et al., the deflector of the Ishida et al. reference includes a cylinder 44 having a mirror 14 and an attached rotor 56, and a stator 72 and coil assembly 76 that is attached to a housing 30. The rotor 56 and stator 72 and coil assembly 76 are responsible for driving the rotation of the deflector.

The Ishida et al. reference also discloses that the cylinder 44 includes inner magnetic rings 60 and that the housing includes outer magnetic rings 66. The magnetic rings 60 and 66 are disclosed to provide an attractive magnetic force therebetween to provide a magnetic thrust bearing.

Figure 2 of Ishida et al. is shown below.

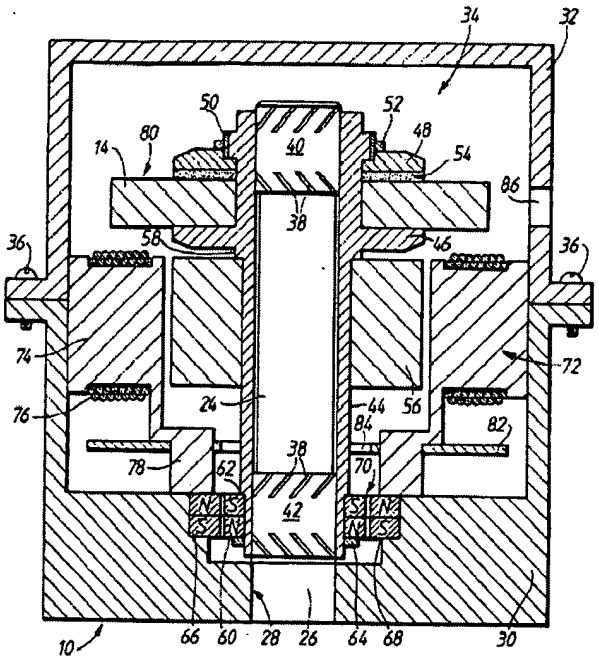

FIG.2.

The deflector of Ishida et al., therefore, is driven by the rotor 56 and stator 72 and coil assembly 76, while the inner and outer magnetic rings 60 and 66 provide a magnetic thrust bearing.

The apparatus as claimed in independent claim 29 requires, in part, that the stator element and the magnetic element mutually generate a magnetic traction force therebetween for substantially holding the movable member in a stationary position during periods when the stator element is not activated to cause the rotor to be rotated.

The office action states that the Ishida et al. reference discloses a "the recited movable member [44, 56], the fixed member [30], the optical element [14], the magnetic element [60, 66], the magnetically permeable stator element [72], and the current coil [76]". There is no traction force generated, however, between the magnetic rings 60, 66 (at the lower end of the cylinder) and either the rotor 56 or the stator 72 and coil assembly 76 (at the middle of the cylinder).

Moreover, there is no disclosure in the Ishida et al. reference that the magnetic thrust bearing provided by the rings 60, 66 would hold the cylinder in a stationary position during periods when the cylinder 14 is not moving. In fact, the Ishida et al. reference discloses that "friction between a motor shaft and bearing needs to be minimized for high speed rotation" of motor shafts in optical deflectors (Ishida et al., col.1, lines 13 - 15). To expect that the magnetic rings 60 and 66 would cause the cylinder to be held in a stationary position when stator element is not actuated to cause the rotor to rotate would be contrary to the teaching of the objectives of the disclosure in the Ishida et al. reference. The magnetic rings, in fact, are disclosed to provide a magnetic thrust bearing, which presumably provides little or negligible friction.

Applicants submit, therefore, that the Ishida et al. reference does not disclose an apparatus as claimed in claim 29. Each of dependent claims 30 - 31 depend from claim 29 and further limit the subject matter thereof.

Independent method claim 24 similarly requires, in part, that the stator element and the magnetic element mutually generate a magnetic traction force therebetween for substantially holding the movable member in a stationary position during periods when the stator element is not activated to cause the rotor to be rotated. For the reasons discussed above with reference to claim 29, method claim 24 is considered to be in condition for allowance. Each of dependent claims 25 - 28 depend from claim 24 and further limit the subject matter thereof. Each of claims 24 - 31, therefore, is considered to be in condition for allowance.

Each of claims 1 - 31, therefore is considered to be in condition for allowance. Favorable action consistent with the above is respectfully requested.

Respectfully submitted,

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